

OPERATING MANUAL

ADVANCED STEREO-RHOMBOID ATTACHMENT (PROTOTYPE)

FOR THE

STAT

 ZOOM 70 STEREOSCOPE

December 1965

Manufactured by



STAT

Declassification Review by NGA/DoD

OPERATING MANUAL
ADVANCED STEREO-RHOMBOID ATTACHMENT (PROTOTYPE)
FOR THE

STAT

[] ZOOM 70 STEREOSCOPE

PURPOSE

STAT

The purpose of the Advanced Stereo-Rhomboid Attachment is to increase the versatility of the [] Zoom 70 Stereoscope when used to view two photographs comprising a stereo pair. The Advanced Stereo-Rhomboid Attachment provides a wide variable span rhomboid, 2x premagnification, and the capability for continuous and independent rotation of both stereo photographs.

DESCRIPTION

STAT

The Advanced Stereo-Rhomboid Attachment consists of five major assemblies. These are the main housing, two rhomboid arms, and two rotating lens assemblies. The main housing fastens to the [] Power Pod by means of a mating dovetail and knurled thumbscrew. The housing contains one reflecting prism and two Amici roof prisms which direct the two optical lines of sight to the corresponding field lenses located in the rhomboid arms. Each rhomboid arm is capable of being rotated about a vertical axis. This rotation provides a means of adjusting the span distance from 1.6 inches to 9.5 inches. The rhomboid arms contain a focusing adjustment which allows the Advanced Stereo-Rhomboid Attachment to be matched to any [] Zoom 70 Stereoscope.

25X1

STAT

Secured to the base of each rhomboid arm is a rotating lens assembly. This lens assembly provides both the premagnification and image rotation capability. Each rotating lens assembly contains two lens triplets which furnish a 2x premagnification. A folded [] prism between the lens triplets provides for continuous image rotation.

INITIAL ALIGNMENT

General - The Advanced Stereo-Rhomboid Attachment can be used with any [] Zoom 70 Stereoscope. Once the initial alignment procedure described below has been completed with a particular Zoom 70 Stereoscope, no further optical or mechanical adjustments should be necessary. The Advanced Stereo-Rhomboid Attachment can then be attached or removed from the [] Zoom 70 as required without repeating this initial alignment. If, however, it is desired to use the Advanced Stereo-Rhomboid Attachment with some other Zoom 70 Stereoscope, the initial alignment procedure described below should be repeated.

Mechanical Alignment - Set up the [] Zoom 70 Stereoscope for normal 25X1 viewing and remove any supplementary lenses or rhomboids which may be attached. Remove the two knurled #2 screws which secure the pod to the stand and substitute the two 2-64 x 1/4" screws which are supplied.

Notice that the dovetail on the left side of the Advanced Stereo-Rhomboid Attachment housing is secured to the housing with three #4 socket-head cap screws. This adjustment enables the Advanced Stereo-Rhomboid Attachment to mate with any [] Zoom 70 Stereoscope and ensure a smooth sliding fit.

Using a 3/32 inch Allen wrench, loosen the three #4 cap screws securing the adjustable dovetail gib to the housing. Carefully slide the Advanced Stereo-Rhomboid Attachment in position. Using finger pressure, hold the adjustable gib in contact with its mating surface on the [] Power Pod, and tighten the three #4 cap screws.

Check to see that the gib is properly adjusted. When the gib is properly adjusted, the Advanced Stereo-Rhomboid Attachment should slide smoothly on the mating dovetails. When the dovetails are fully engaged there should be no perceptible lateral motion of the Advanced Stereo-Rhomboid Attachment with respect to the [] Power Pod.

The mechanical alignment is now complete, and the Advanced Stereo-Rhomboid Attachment should be removed from the [] Zoom 70 Stereoscope in preparation for Optical Alignment.

Optical Alignment - Ensure that any supplementary lenses and rhomboids have been removed from the [] Power Pod. Place an object to be viewed, such as a high resolution photographic transparency, under the Power Pod. Rotate the Power Changer Knob fully counter-clockwise to maximum magnification. While viewing through the eyepiece without the focusing sleeve, adjust the Focusing Knob until the object is clear and well defined. Next, view through the eyepiece with the focusing sleeve, and adjust the focusing sleeve until the object is again sharp and well defined. The [] Zoom 70 Stereoscope is now focused and ready to receive the Advanced Stereo-Rhomboid Attachment.

Slide the Advanced Stereo-Rhomboid Attachment onto the dovetail of the Zoom 70 Power Pod; engage and tighten the knurled thumbscrew. Place the object to be viewed under the rotating lens assembly which corresponds to the eyepiece without the focusing sleeve. Using a short screwdriver engage the slotted-adjusting screw on the bottom of the corresponding rhomboid arm. Rotate this adjusting screw until object being viewed is sharp and well-defined. Slide the object being viewed beneath the other rotating lens assembly, that is the lens assembly corresponding to the eyepiece with the focusing sleeve. Locate the adjusting screw on the corresponding rhomboid arm and adjust the screw until the image is sharp and well defined. This completes the optical alignment procedure for the Advanced Stereo-Rhomboid Attachment.

OPERATING INSTRUCTIONS

Place the stereo photographs to be viewed beneath the rotating lens assemblies. With the Power Changer Knob adjusted to maximum magnification, rotate the focusing knob until the images are sharp and well defined. Adjust the magnification to minimum. Position the rhomboid arms and/or the stereo photographs until the area of interest is centered in each field of view. Rotate the

lens assemblies in unison until the maximum stereo effect is achieved. If it is desired to view the objects at high power it may be necessary to make minor adjustments of the rhomboids and/or photographs as the magnification is increased. After adjusted at maximum power no further adjustments should be necessary.

LUBRICATION

The Advanced Stereo-Rhomboid Attachment is permanently lubricated at the factory and no additional lubrication is required.

CLEANING OPTICAL SURFACES

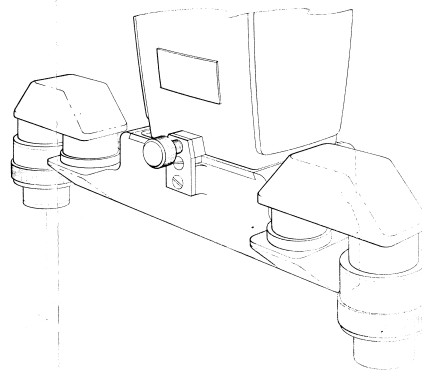
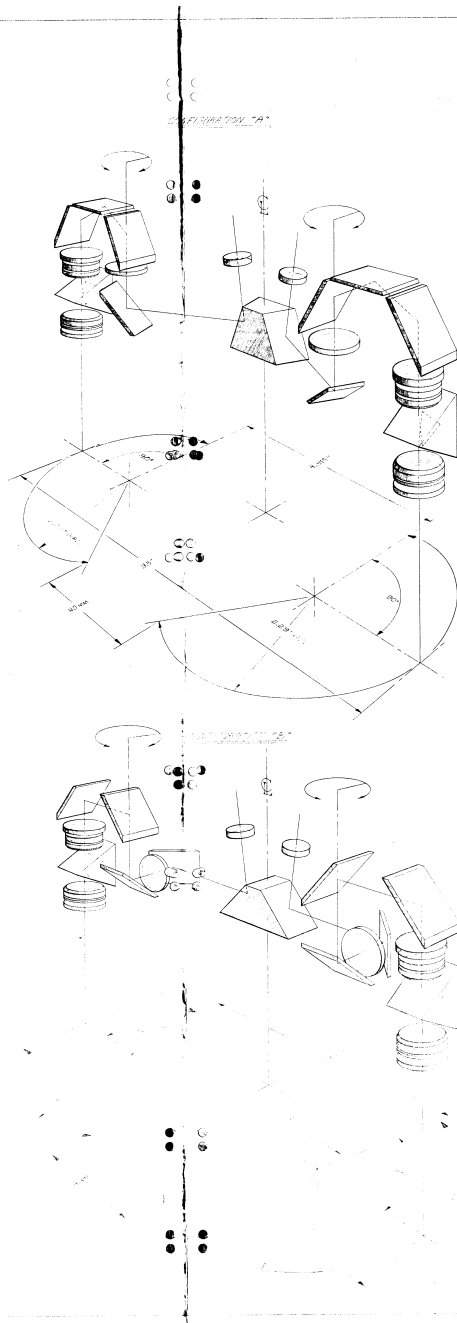
The reflecting prism and the external glass surfaces of the rotating lens assemblies may require cleaning if the surfaces become excessively dirty. Do not attempt to disassemble the Advanced Stereo-Rhomboid Attachment. The internal glass surfaces have been factory cleaned and aligned.

For external surfaces that are dusty, but do not have smudges, fingerprints, or grease marks, gently brush loose dust from surfaces using a soft camels-hair brush.

CAUTION

Cleaning of optical surfaces should be performed only when surfaces are excessively dirty. Repeated day to day cleaning can be more harmful than helpful.

For external surfaces that are smeared with oil or grease, or have fingerprints on them, clean the surfaces with a cotton swab or lens tissue which has been moistened with lens cleaner.



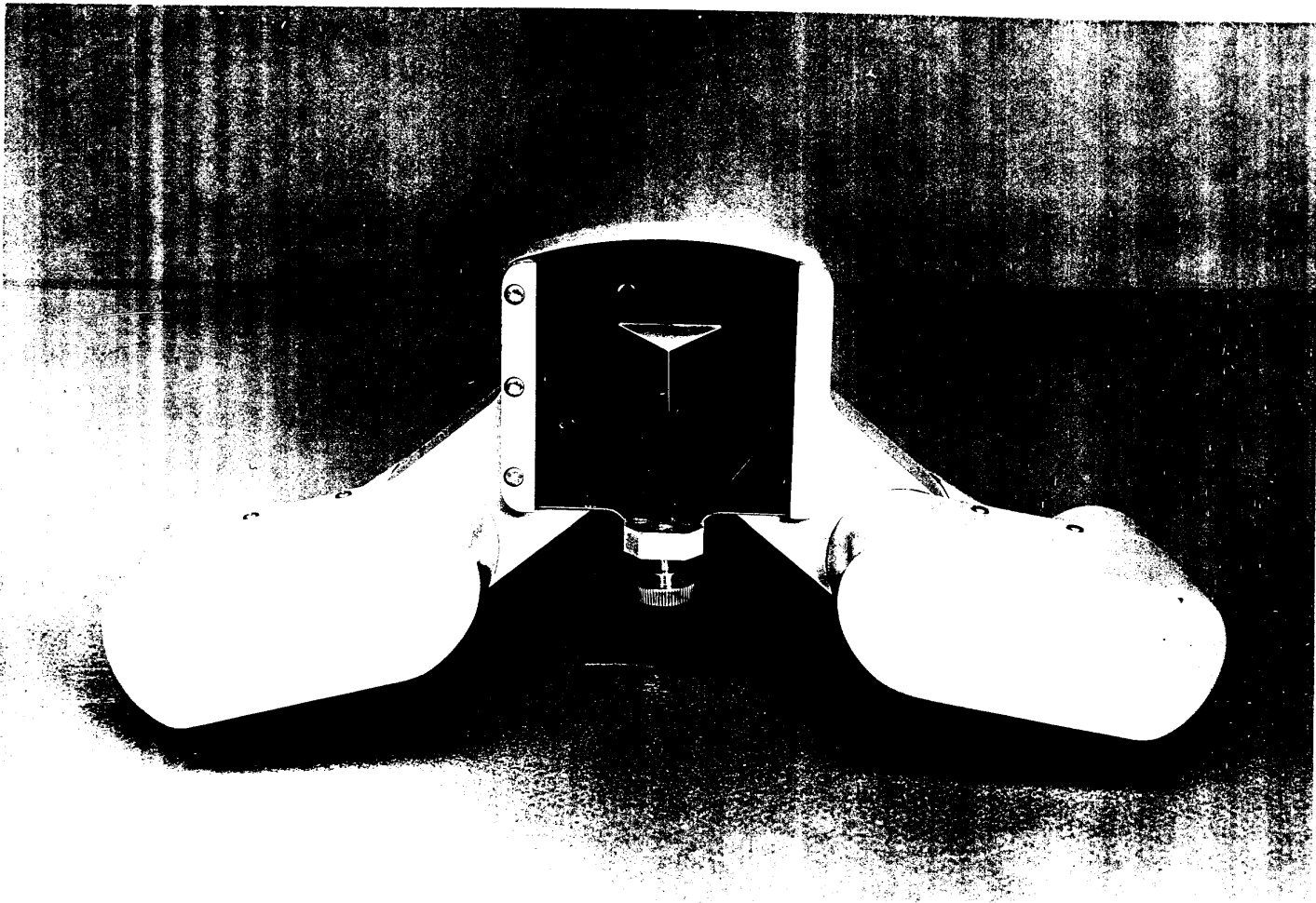
PRELIMINARY PRINT
NOT FOR PRODUCTION

UNLESS OTHERWISE SPECIFIED	FINISH	36090	36090
1. DIMENSIONS ARE IN INCHES	2. DIMENSIONS ON DIMENSIONS	3. DIMENSIONS ON DIMENSIONS	4. DIMENSIONS ON DIMENSIONS
5. DIMENSIONS ON DIMENSIONS	6. DIMENSIONS ON DIMENSIONS	7. DIMENSIONS ON DIMENSIONS	8. DIMENSIONS ON DIMENSIONS
9. DIMENSIONS ON DIMENSIONS	10. DIMENSIONS ON DIMENSIONS	11. DIMENSIONS ON DIMENSIONS	12. DIMENSIONS ON DIMENSIONS
13. DIMENSIONS ON DIMENSIONS	14. DIMENSIONS ON DIMENSIONS	15. DIMENSIONS ON DIMENSIONS	16. DIMENSIONS ON DIMENSIONS
17. DIMENSIONS ON DIMENSIONS	18. DIMENSIONS ON DIMENSIONS	19. DIMENSIONS ON DIMENSIONS	20. DIMENSIONS ON DIMENSIONS
21. DIMENSIONS ON DIMENSIONS	22. DIMENSIONS ON DIMENSIONS	23. DIMENSIONS ON DIMENSIONS	24. DIMENSIONS ON DIMENSIONS
25. DIMENSIONS ON DIMENSIONS	26. DIMENSIONS ON DIMENSIONS	27. DIMENSIONS ON DIMENSIONS	28. DIMENSIONS ON DIMENSIONS
29. DIMENSIONS ON DIMENSIONS	30. DIMENSIONS ON DIMENSIONS	31. DIMENSIONS ON DIMENSIONS	32. DIMENSIONS ON DIMENSIONS
33. DIMENSIONS ON DIMENSIONS	34. DIMENSIONS ON DIMENSIONS	35. DIMENSIONS ON DIMENSIONS	36. DIMENSIONS ON DIMENSIONS
37. DIMENSIONS ON DIMENSIONS	38. DIMENSIONS ON DIMENSIONS	39. DIMENSIONS ON DIMENSIONS	40. DIMENSIONS ON DIMENSIONS
41. DIMENSIONS ON DIMENSIONS	42. DIMENSIONS ON DIMENSIONS	43. DIMENSIONS ON DIMENSIONS	44. DIMENSIONS ON DIMENSIONS
45. DIMENSIONS ON DIMENSIONS	46. DIMENSIONS ON DIMENSIONS	47. DIMENSIONS ON DIMENSIONS	48. DIMENSIONS ON DIMENSIONS
49. DIMENSIONS ON DIMENSIONS	50. DIMENSIONS ON DIMENSIONS	51. DIMENSIONS ON DIMENSIONS	52. DIMENSIONS ON DIMENSIONS
53. DIMENSIONS ON DIMENSIONS	54. DIMENSIONS ON DIMENSIONS	55. DIMENSIONS ON DIMENSIONS	56. DIMENSIONS ON DIMENSIONS
57. DIMENSIONS ON DIMENSIONS	58. DIMENSIONS ON DIMENSIONS	59. DIMENSIONS ON DIMENSIONS	60. DIMENSIONS ON DIMENSIONS
61. DIMENSIONS ON DIMENSIONS	62. DIMENSIONS ON DIMENSIONS	63. DIMENSIONS ON DIMENSIONS	64. DIMENSIONS ON DIMENSIONS
65. DIMENSIONS ON DIMENSIONS	66. DIMENSIONS ON DIMENSIONS	67. DIMENSIONS ON DIMENSIONS	68. DIMENSIONS ON DIMENSIONS
69. DIMENSIONS ON DIMENSIONS	70. DIMENSIONS ON DIMENSIONS	71. DIMENSIONS ON DIMENSIONS	72. DIMENSIONS ON DIMENSIONS
73. DIMENSIONS ON DIMENSIONS	74. DIMENSIONS ON DIMENSIONS	75. DIMENSIONS ON DIMENSIONS	76. DIMENSIONS ON DIMENSIONS
77. DIMENSIONS ON DIMENSIONS	78. DIMENSIONS ON DIMENSIONS	79. DIMENSIONS ON DIMENSIONS	80. DIMENSIONS ON DIMENSIONS
81. DIMENSIONS ON DIMENSIONS	82. DIMENSIONS ON DIMENSIONS	83. DIMENSIONS ON DIMENSIONS	84. DIMENSIONS ON DIMENSIONS
85. DIMENSIONS ON DIMENSIONS	86. DIMENSIONS ON DIMENSIONS	87. DIMENSIONS ON DIMENSIONS	88. DIMENSIONS ON DIMENSIONS
89. DIMENSIONS ON DIMENSIONS	90. DIMENSIONS ON DIMENSIONS	91. DIMENSIONS ON DIMENSIONS	92. DIMENSIONS ON DIMENSIONS
93. DIMENSIONS ON DIMENSIONS	94. DIMENSIONS ON DIMENSIONS	95. DIMENSIONS ON DIMENSIONS	96. DIMENSIONS ON DIMENSIONS
97. DIMENSIONS ON DIMENSIONS	98. DIMENSIONS ON DIMENSIONS	99. DIMENSIONS ON DIMENSIONS	100. DIMENSIONS ON DIMENSIONS

94838 5
FSA
14 Jan

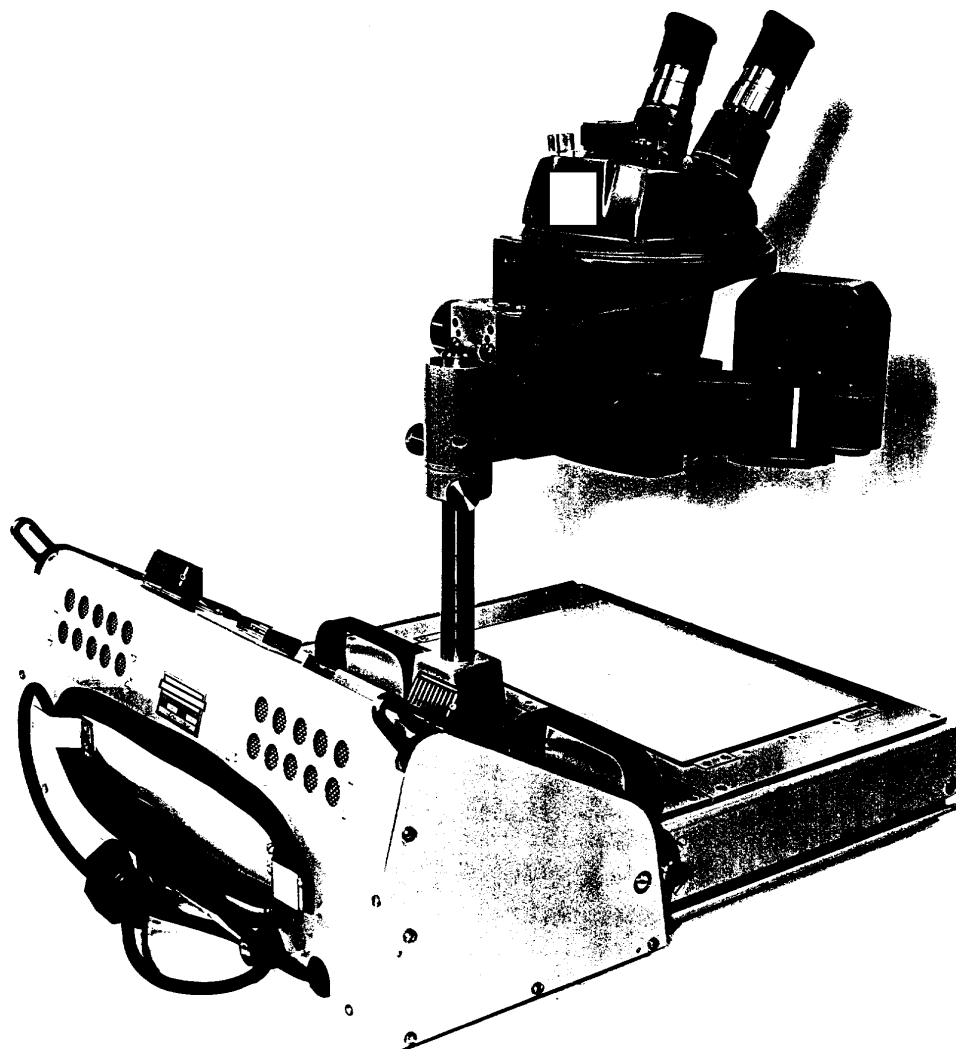
BEST COPY
Available

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2



Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

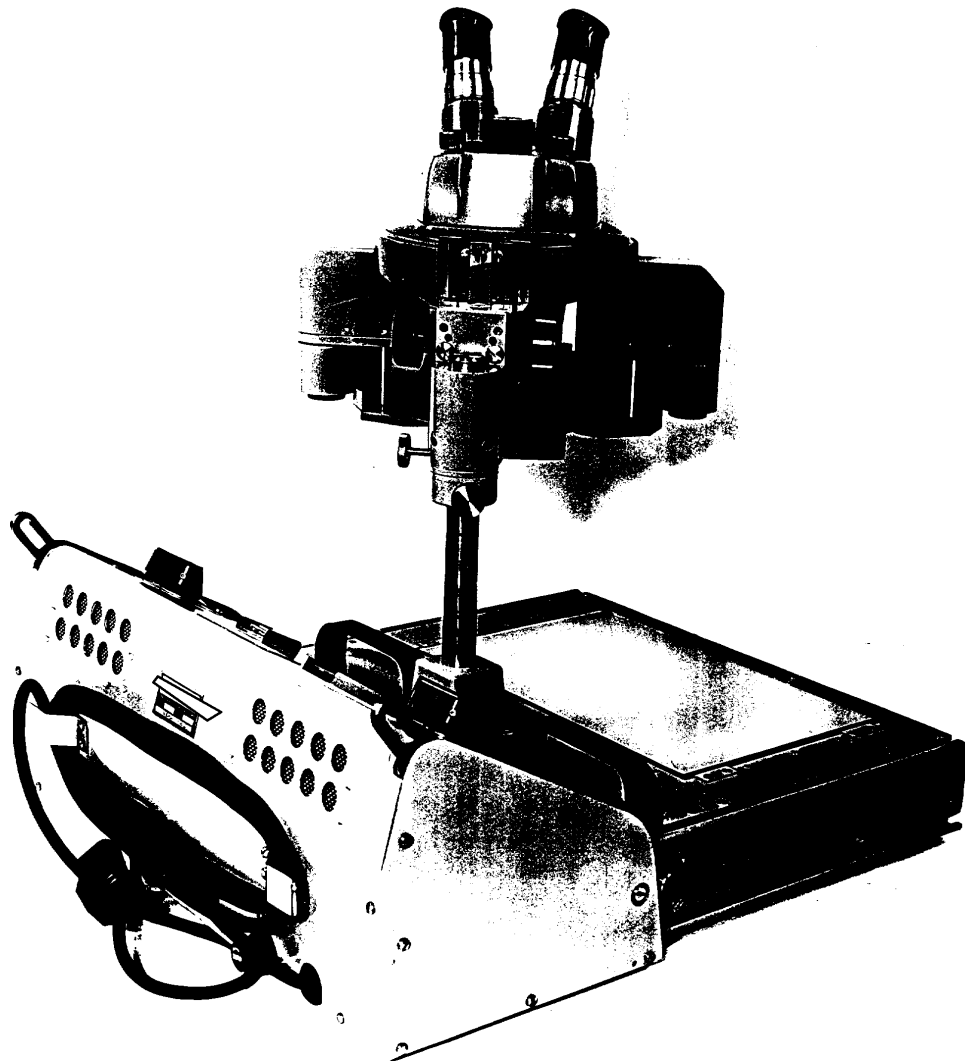


STAT

STAT

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

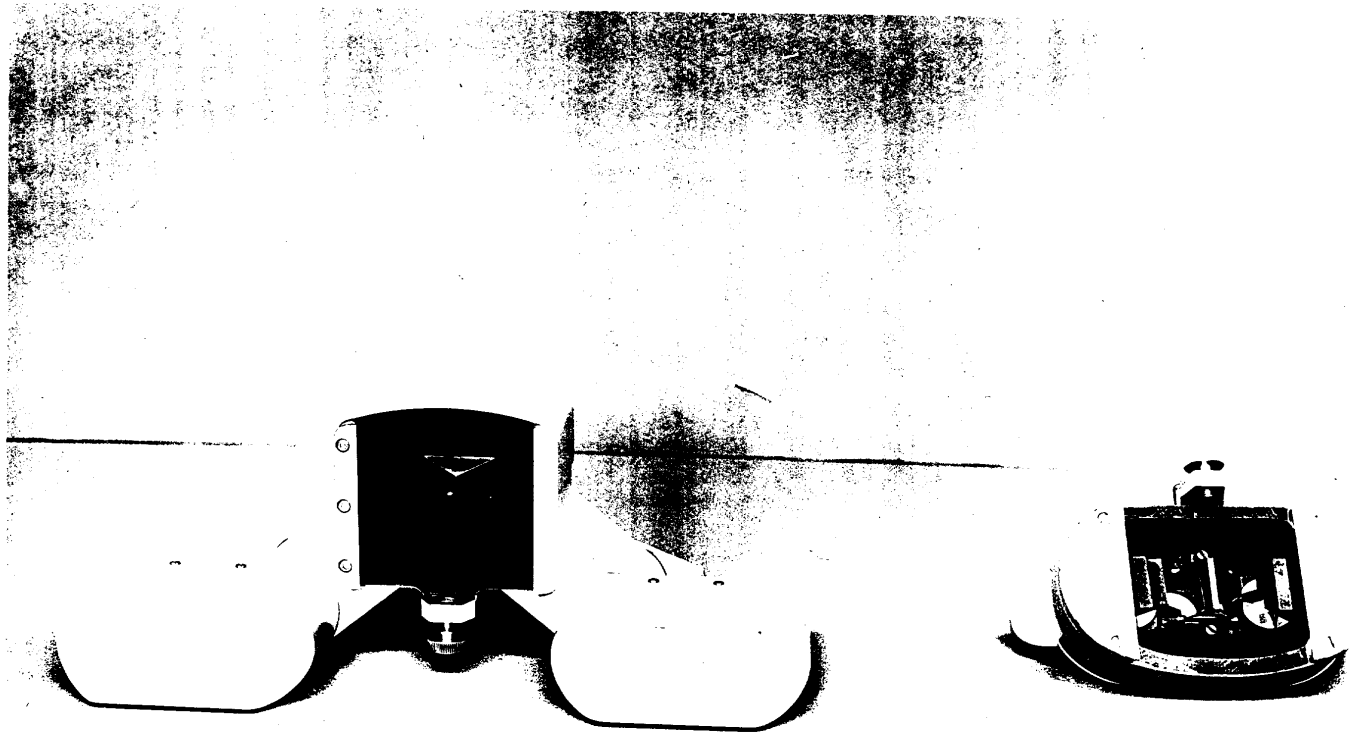
Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2



STAT

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

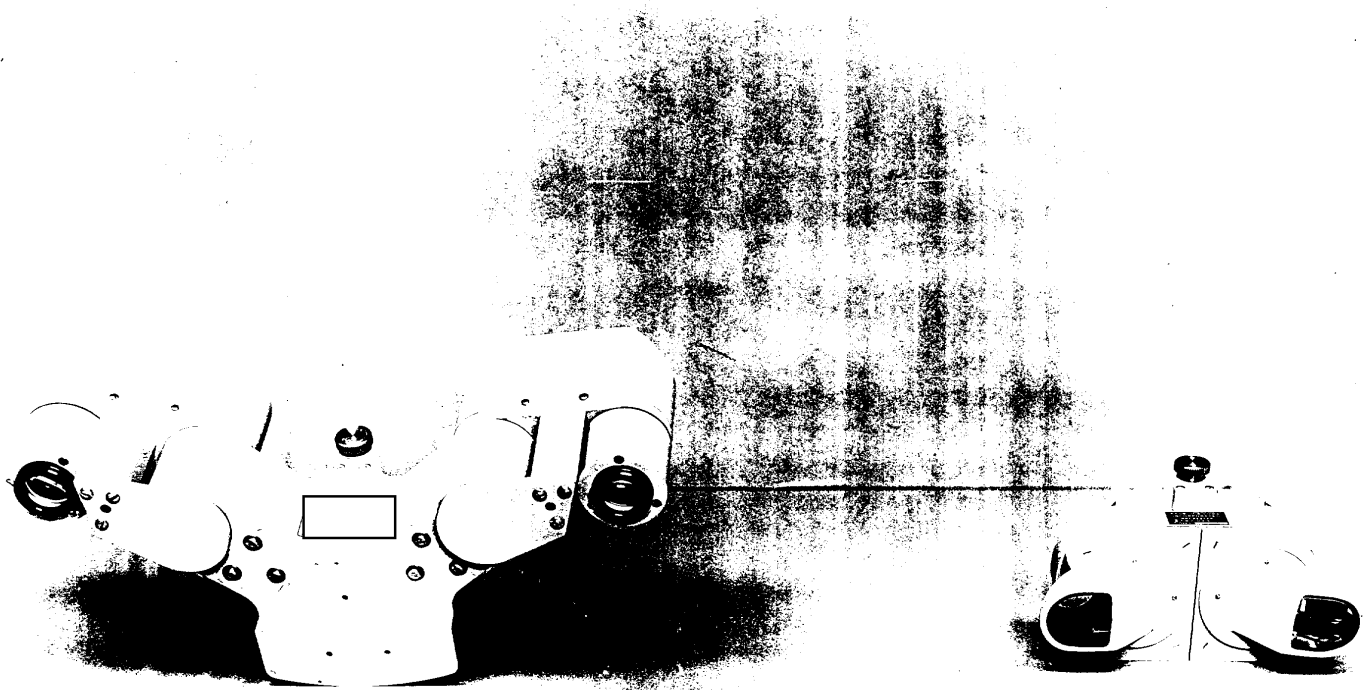
Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2



Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

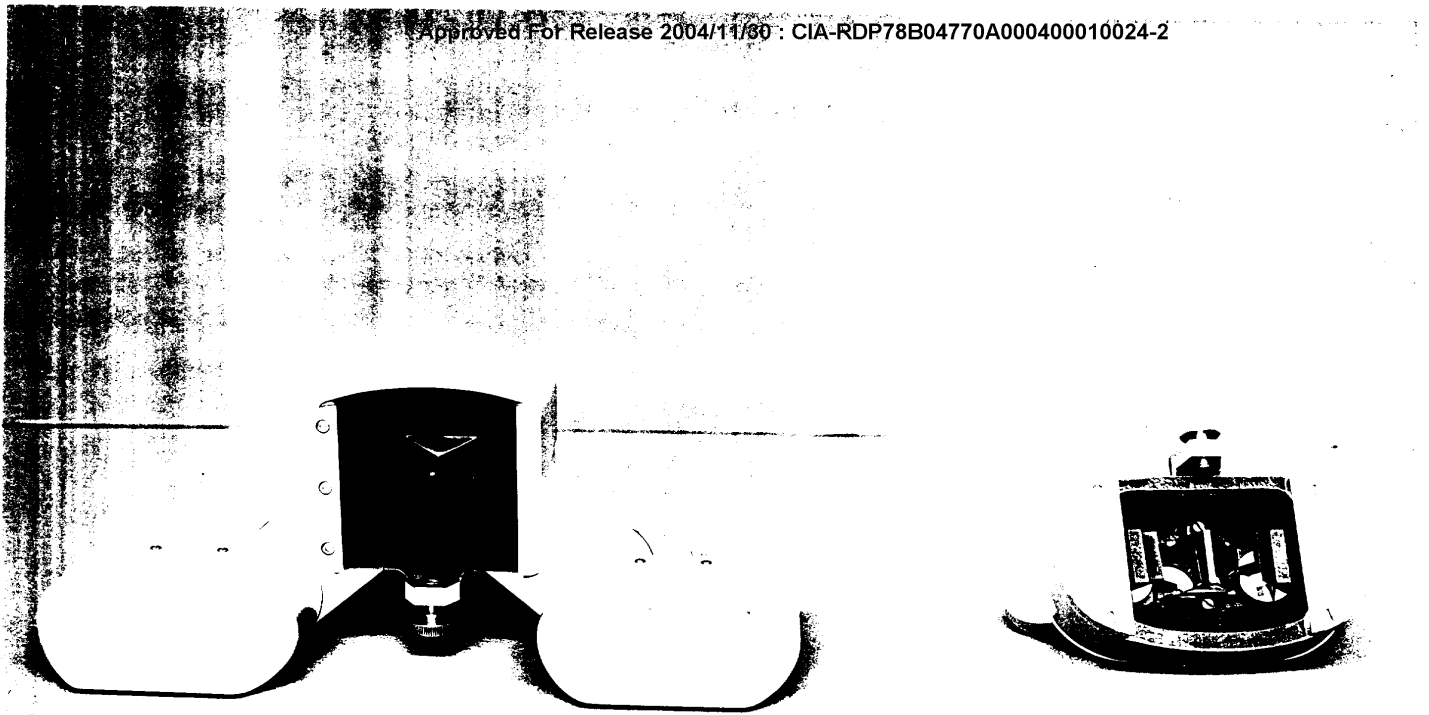
Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

STAT



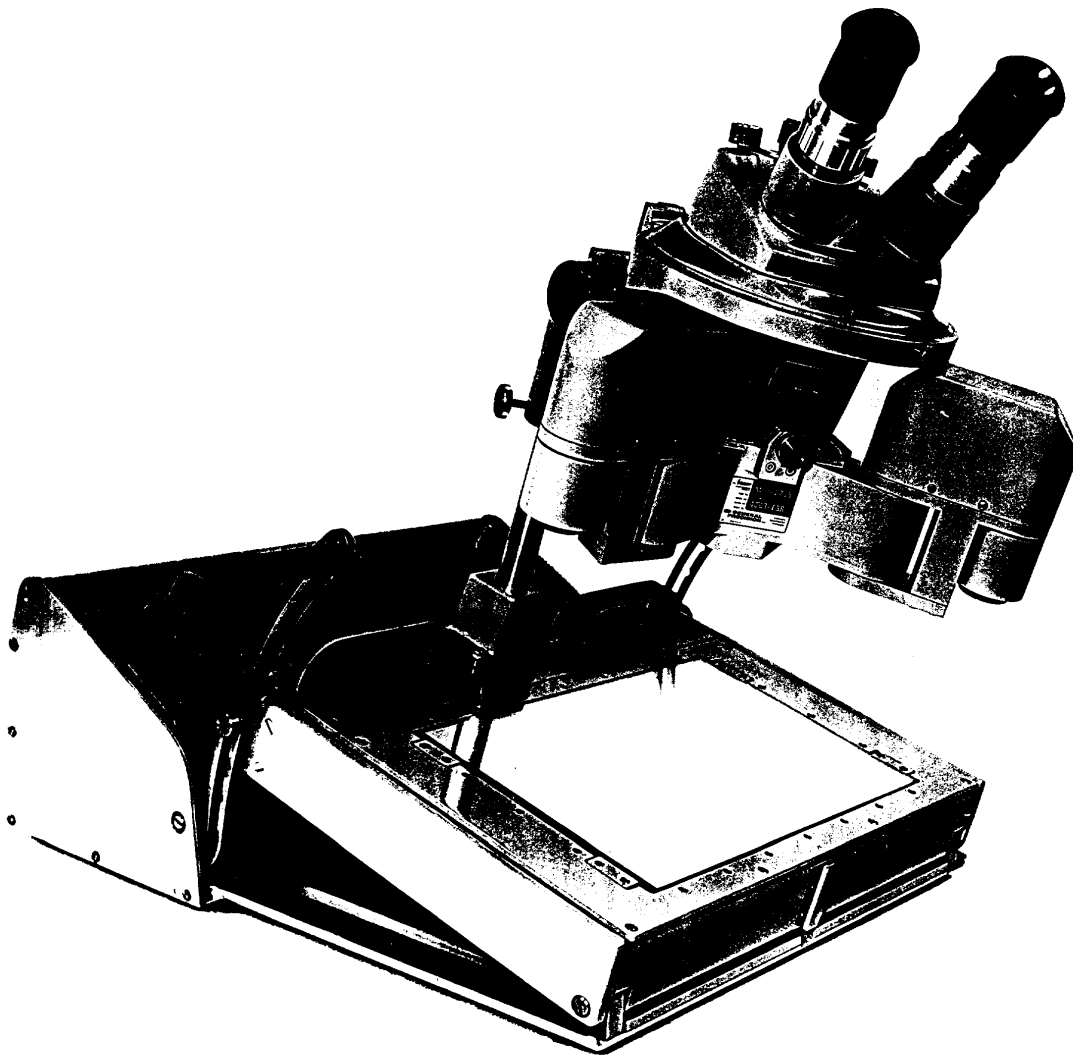
Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2



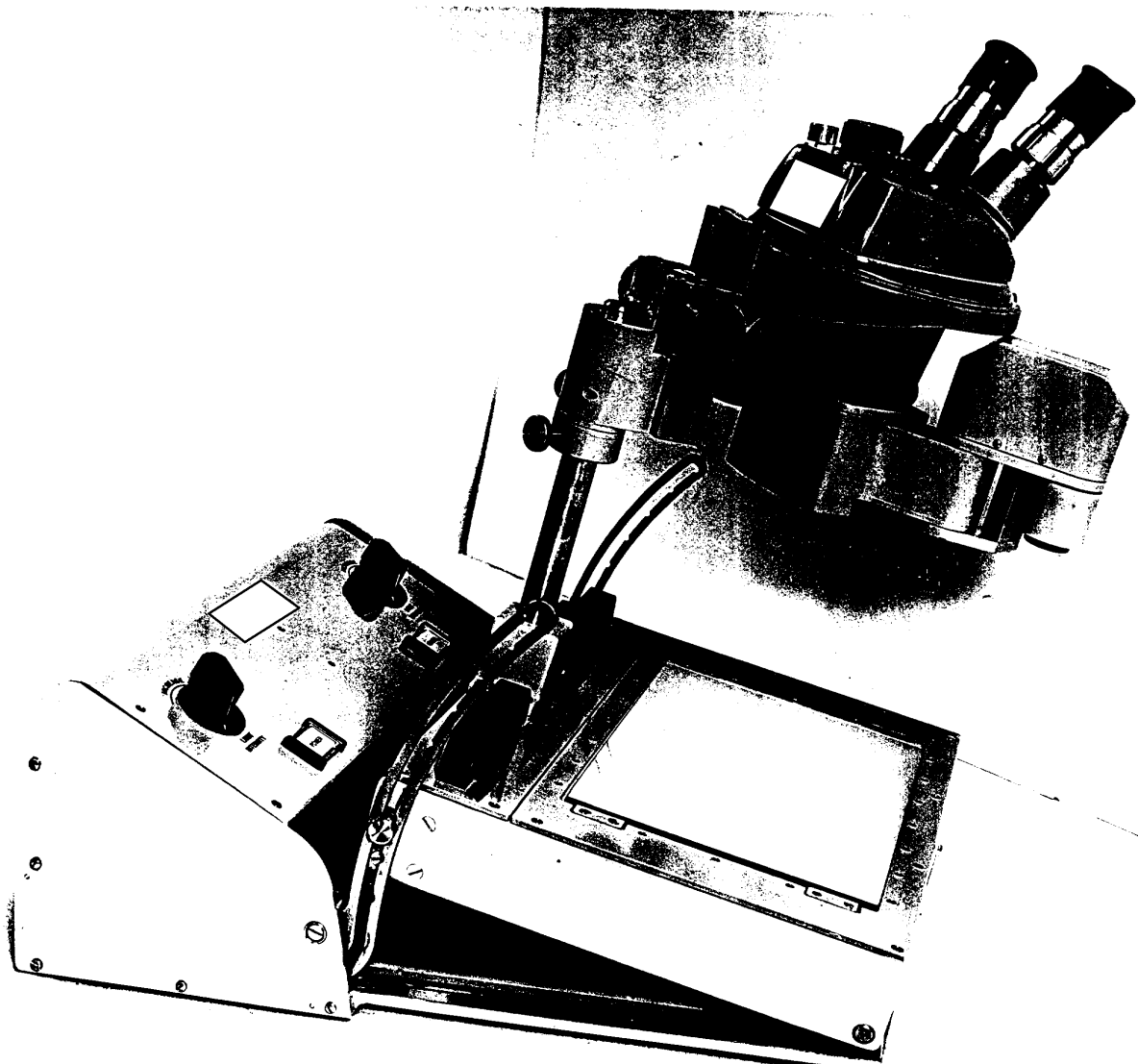
Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2



Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

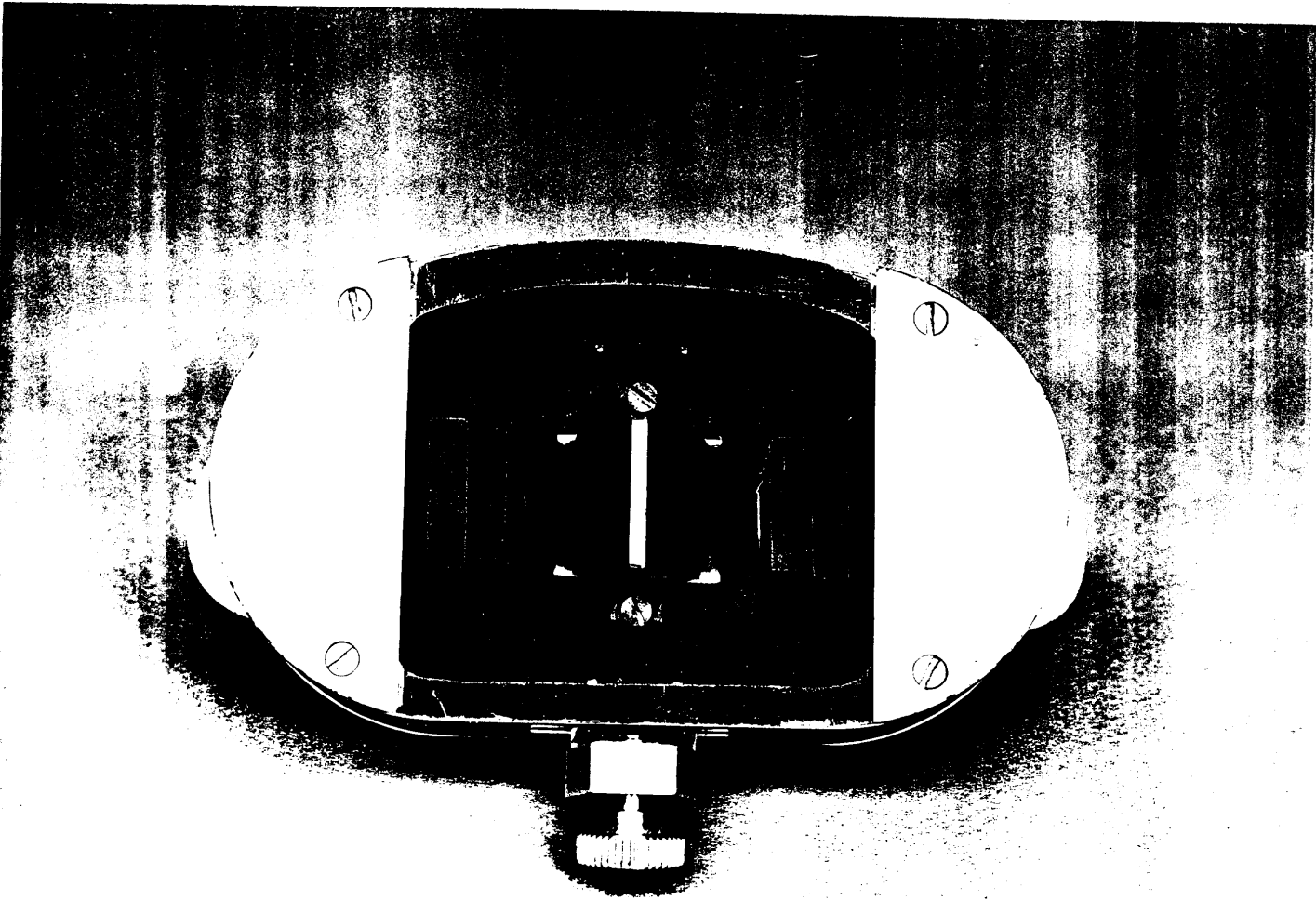


STAT

STAT

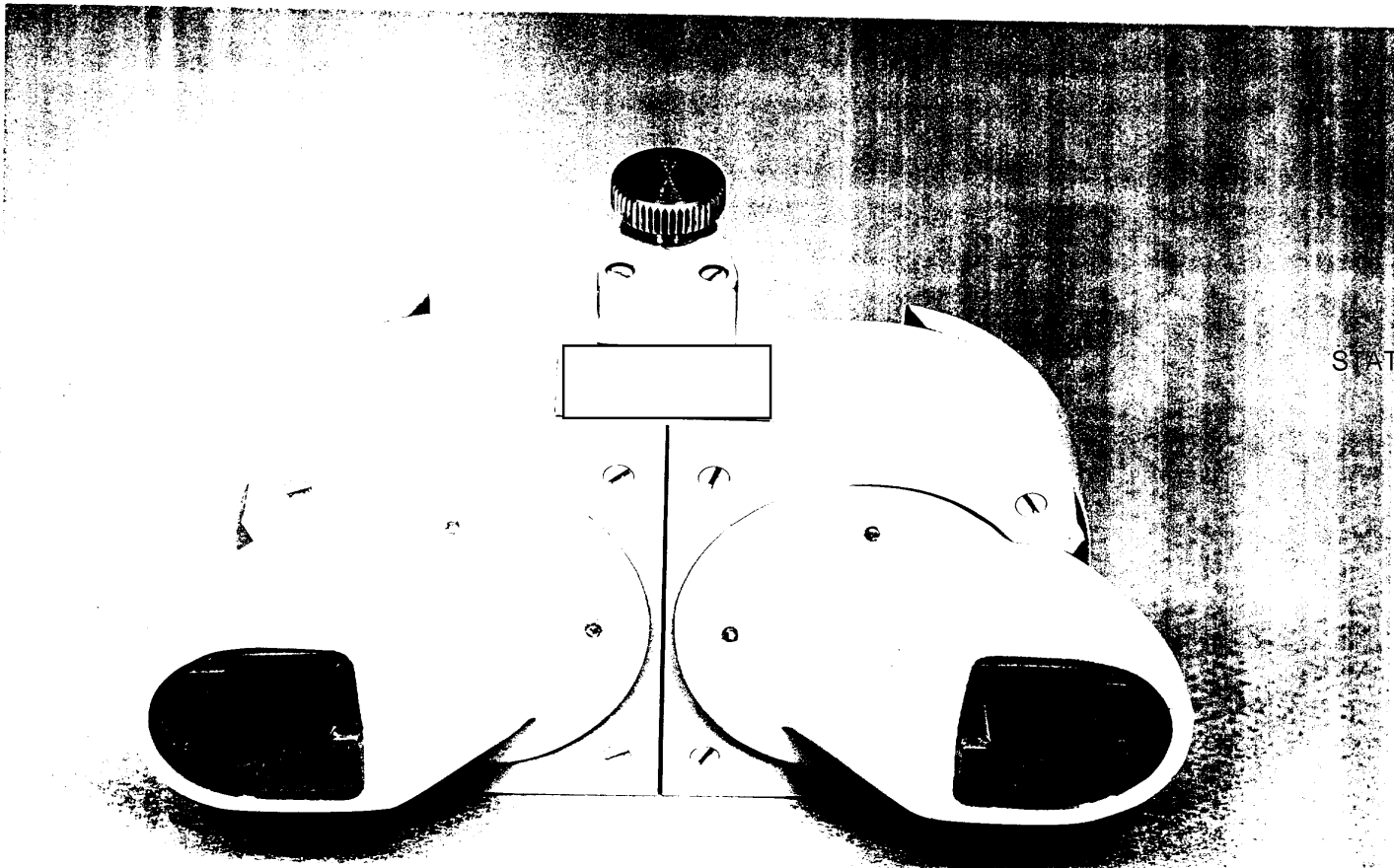
Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2



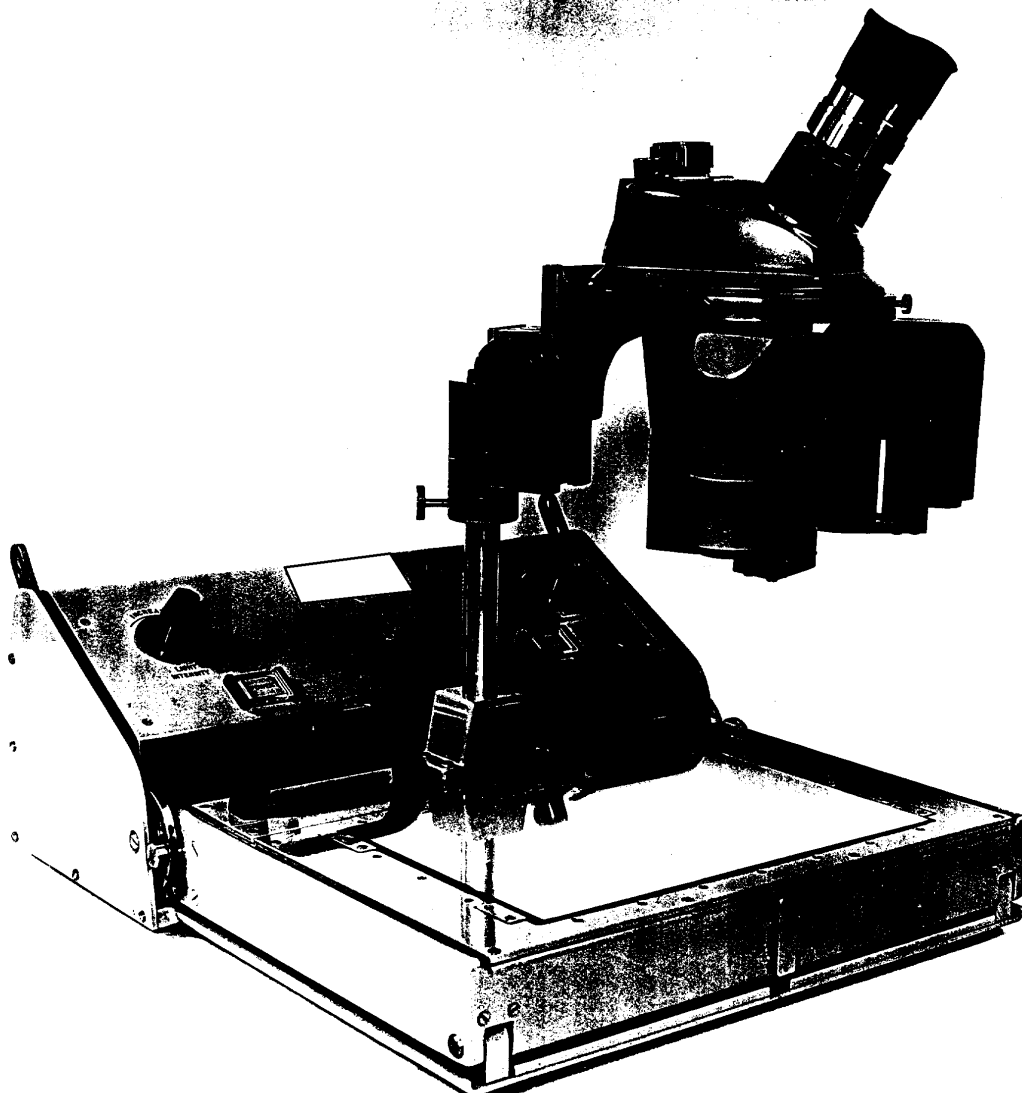
Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2



Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

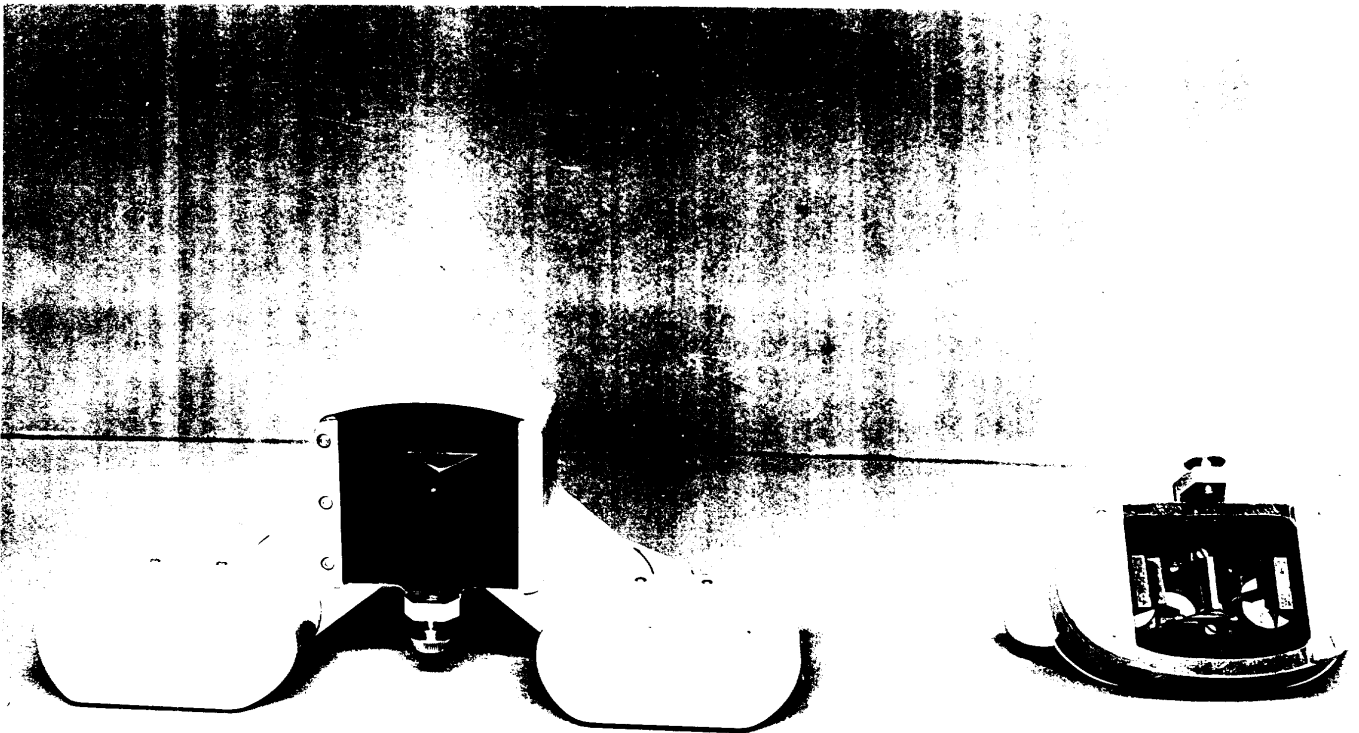
Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2



STAT

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

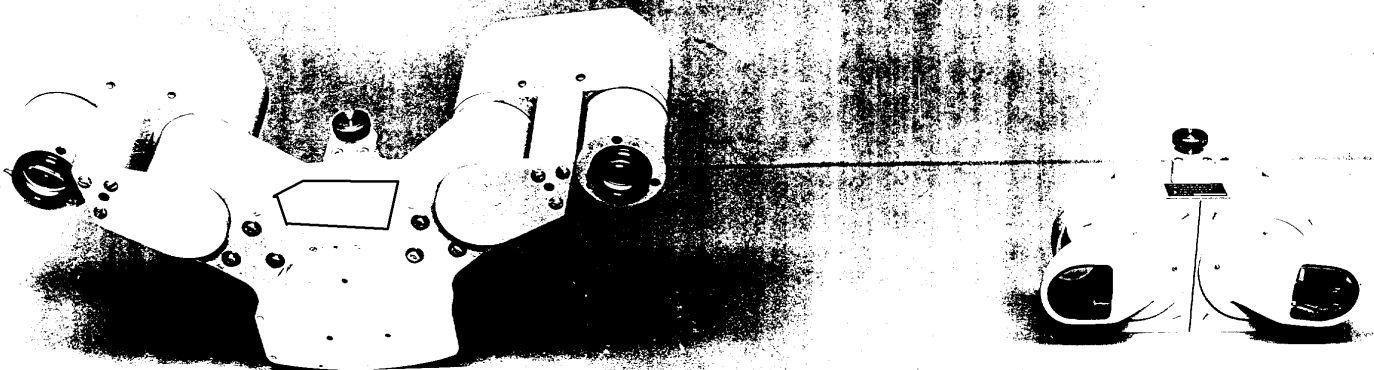
Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2



Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

STAT



Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

#998385
FEB

Ship To:

Job or Acct. No. - A8-003-AADescription

List of Drawings for Item 2 Page 1

200-100-702	315-100-056
200-100-703	315-100-057
200-100-710	320-100-035
200-100-711	320-100-036
200-100-742	324-100-007
200-100-743	333-100-091
200-100-744	333-100-092
200-100-746	333-100-093
200-100-747	343-100-156
200-100-751	343-100-158
200-100-755 - Rev. A	343-100-159
200-100-757	352-100-010
300-100-147	352-100-011
300-100-148	352-100-012
300-100-149 - Rev. A	360-100-012
308-100-164	370-100-152 - Rev. A
308-100-165	370-100-153 - Rev. A
308-100-166	370-100-154 - Rev. A
314-100-068	370-100-155 - Rev. A
314-100-071	370-100-156 - Rev. A
314-100-072 - Rev. A	370-100-157 - Rev. A
314-100-073 - Rev. A	370-100-158
314-100-074	370-100-164
	370-100-165
	370-100-166
	370-100-172

STAT

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2

MASTER RHOMBROID INSTRUCTION MANUAL

Approved For Release 2004/11/30 : CIA-RDP78B04770A000400010024-2